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AN INVITATION TO REVITALIZE GREATER VANCOUVER'S LIVABLE REGION STRATEGY

Greater Vancouver Agricultural Overview

Greater Vancouver Regional District
March 1990

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CHOOSING OUR FUTURE

GREATER VANCOUVER AGRICULTURAL OVERVIEW

Prepared for

Greater Vancouver Regional District

by

G.Gary Runka, P. Ag.

G.G. Runka Land Sense Ltd.

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EXECUTIVE SUMMARY

Since the adoption of the Livable Region Plan, the public awareness of and commitment to agriculture as an economic activity, a scarce natural resource, an open space component and a lifestyle activity have increased dramatically. The purpose of this discussion paper is to provide an overview of current regional agricultural issues.

The Greater Vancouver region has ±92,000 ha. of land with significant agriculture capability, including ±26,000 ha. of some of the highest capability agriculture land in Canada. Approximately 64,200 ha is currently within the Agricultural Land Reserve.

While both the number of farms and total acreage farmed have decreased since 1971, agricultural use has intensified, with a significant increase in annual crop and site agriculture use plus a very significant increase in berry fruit production.

With only 14.5% of the farms and only 1.6% of the total area in farms in B.C., the Greater Vancouver region accounts for 26% of B.C.'s total farm sales. From 1976 to 1989, annual regional farm cash receipts are estimated to have increased from ±$120 million to ±$300 million. In addition, there are some ±250 businesses involved in food processing and associated activities, with an estimated annual output value of ±$3 billion.

While the introduction of the ALR legislation in 1973 has decreased the conversion of farmland within the ALR to urban uses, agriculture within the Greater Vancouver region remains under intense pressure. If the goal is for a healthy, vibrant, regional agricultural industry, there are a wide range of urban-rural interface issues that will need to be addressed, including:

* agricultural versus urban drainage requirements,
* competition for water,
* parcel size and density,
* agricultural land values,
* utility and transportation severance,
* siting of intensive agriculture,
* use of chemicals in agriculture,
* livestock waste management,
* soil erosion by water, and
* competition from non-agricultural rural land uses.

If agriculture is to remain and indeed thrive as part of the economic, landscape and lifestyle diversity within the Greater Vancouver region, it must become a more integrated part of the overall planning process. Left on the edge of

the process, the region's agricultural community will likely suffer the fate of so many other North American farm communities in similar locations, subconsciously dismissed as a form of urban edge open space, laying in wait for the next inevitable leap of urban development.

If, on the other hand, the people of the Greater Vancouver region take pride in their agricultural community and are prepared to give agriculture the planning priority and market consideration it requires, then the opportunity exists for a sustainable agricultural industry.

The opportunity exists, but only just. For existing and future agricultural activity to flourish, an adequate supply of land for soil-bound and non-soil bound primary production activity must be assured. A key component, therefore, will be the redirection of regional urban growth to available and suitable lands outside the ALR and the encouragement of urban densification and renewal.

Protection of the land base is irrevocably tied to the security of farmers and the health of farm communities. Only with the removal of uncertainty related to farm land conversion and erosion of infrastructure can the agricultural community concentrate on managing its land base and business resources and developing food producing opportunities for the long term.

In addition to regional policy issues, of course, there are also major external influences, some extremely far-reaching, that will impact upon the future of agriculture within the Greater Vancouver region. Provincial agricultural policy, in particular, as well as international competitive trends and the long term impact of global climatic change are just three examples of external influences that will require consideration by regional policy makers.

INTRODUCTION

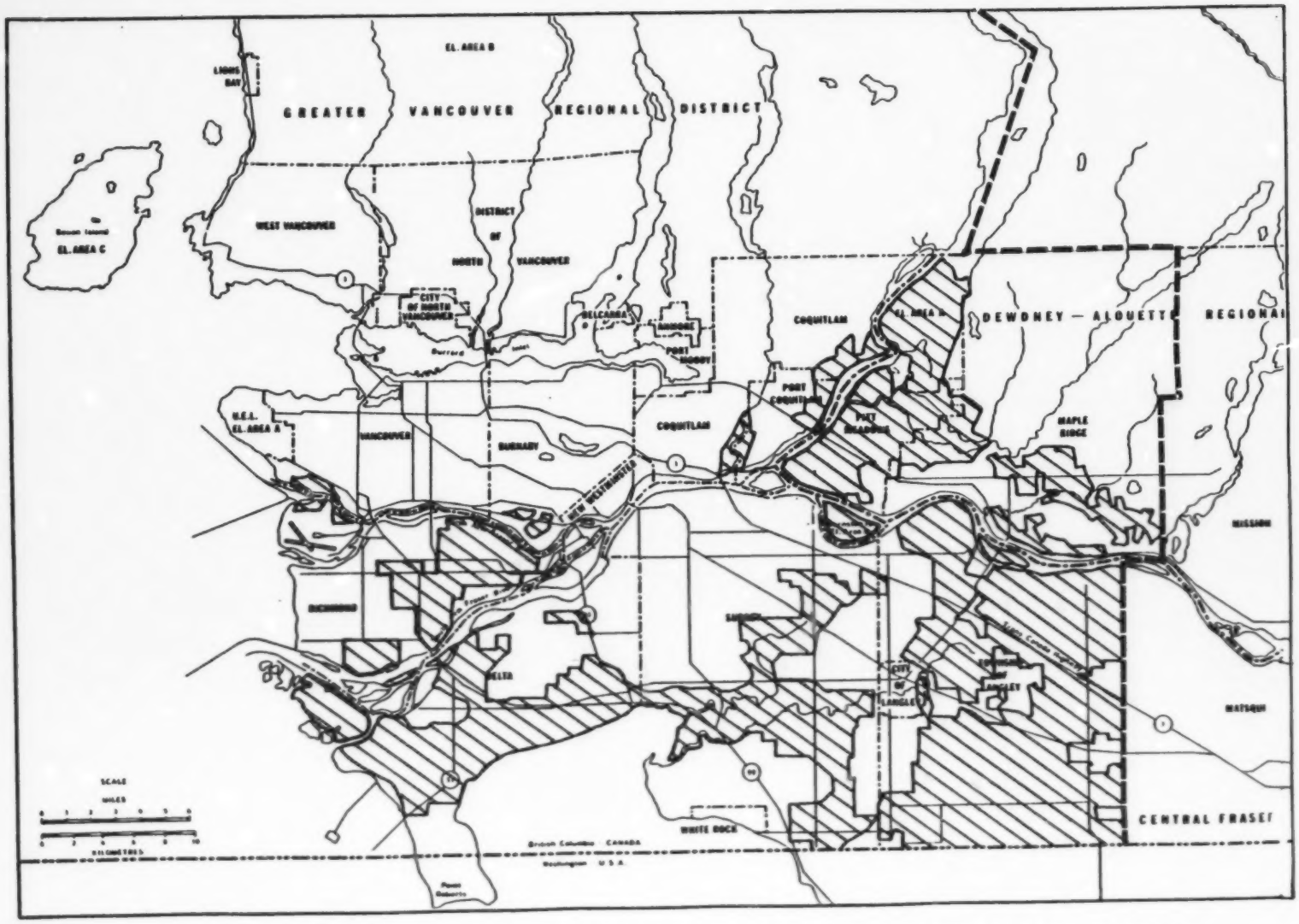
The purpose of this discussion paper is to provide an overview of current regional agricultural issues, highlighting changes from the early 1970's when the Livable Region Strategy was first developed. It is intended as one background input into the "Choosing Our Future" process and development of future regional policy.

NOTE: This discussion paper has been compiled from existing information that was readily available within the time frame. No original research was carried out nor was there opportunity to verify data extracted from existing sources.

At the time of the adoption of the Livable Region Plan, the Greater Vancouver Regional District comprised an area extending east to the Pitt River and the eastern boundary of Surrey. As of 1989, Langley City and Township became part of GVRD and, for the purposes of this background paper on agriculture, we were requested to include Maple Ridge and Pitt Meadows within the definition of the "Greater Vancouver region". (See Map 1) Caution should be used therefore in interpreting statements, and particularly statistics, which in some instances were only available for parts of the Greater Vancouver region.

Since the writing of the Livable Region Plan, the public awareness of and commitment to agriculture as an economic activity, a scarce natural resource, an open space component and a lifestyle activity have increased dramatically.

With only 14.5% of the number of farms in B.C. and only 1.6% of the total area in farms in B.C., the Greater Vancouver region accounts for 26% of B.C.'s total farm sales (1986 Canada Census). Fifty-three percent of greenhouse square footage in B.C. occurs



MAP 1: STUDY AREA BOUNDARY AND GENERAL EXTENT OF AGRICULTURAL LAND RESERVE

Study Area Boundary

Agricultural Land Reserve

in GVRD, including Langley Township, while 67% of the province's mushroom operations, totalling 79% of the square footage is also within this area. In addition, 93% of the national land area in cranberry production is in British Columbia, virtually all of which is located within this region.

Agriculture is more than the production of food crops, however; it is also a sophisticated food industry that includes processing and packaging, storage and transporting and wholesale and retail sales.

Similarly, while much of the public debate surrounding agriculture in recent years has centered around the preservation of agricultural land for food production, it is important to acknowledge the role of agriculture as part of the continuum of rural land uses. In a rapidly urbanizing region, the presence of agriculture can enhance other desirable resource values, such as waterfowl and wildlife habitat and outdoor recreation opportunities, as well as contribute to aesthetics through provision of attractive pastoral landscapes and opportunities for rural lifestyles.

A. THE AGRICULTURAL LAND RESOURCE

1. LAND CHARACTERISTICS

a. Attributes and Constraints

Although there is a range of agricultural climate characteristics within the region, in general, the attributes include the longest frost free periods in Canada with associated extended growing season lengths and adequate heat units. Climatic constraints to agriculture include high winter season rainfall contrasted with limited growing season precipitation.

Regional soil factors significantly influence both the range of crops and the specific crops that can be grown. Together with climatic characteristics, however, the range of soils within the region provides the biophysical opportunity for production of almost all of the 80+ commodities produced throughout the province.

The key attribute of regional soils is the comparatively low to moderate level of management inputs required by the individual farmer to achieve an acceptable production level of soil-bound crops. The most significant regional constraint is poor to very poor natural soil drainage.

b. Land Capability for Agriculture

The region contains ±26,000 ha. of some of the highest capability agriculture land in Canada (Class 1-3 land) with closely associated ±30,000 ha. moderate capability (Class 4) and ±22,000 ha. limited capability (Class 5). In addition, there are ±14,000 ha. (dominantly Class 2-4) of highly to moderately productive organic (peat and muck) soils, for a total of ±92,000 ha. with significant agriculture capability with the region.

Land capability (the soil-climate combination) for agriculture is based on the national Class 1-7 Canada Land Inventory system, with Class 1 having the widest range of cropping options decreasing to Class 7, which has no capability for Agriculture.

TABLE 1: CANADA LAND INVENTORY - GREATER VANCOUVER REGION[1]: LAND CAPABILITY FOR AGRICULTURE

	Class	Area(ha)	(ac)	% of Region
High Capability	1	1,924	4,752	1%
	2	8,486	20,960	5%
	3	15,361	37,942	8%
Moderate Capability	4	29,908	73,873	17%
Forage only Capability	5	21,989	54,313	12%
Grazing Capability	6	4,035	9,966	2%
Organic Soils	2-6 (dominantly 2-4)	14,243	35,180	8%
No Agric. Capability	7	29,899	73,850	17%
Unclassified	(mostly urban uses)	54,220	133,923	30%

[1] includes GVRD, Pitt Meadows and Maple Ridge

2. DYNAMICS OF LAND USE CHANGE

a. Farm Statistics and Commodity Production Changes

According to 1986 Canada Census, farms within the region totalled 93,712 ac. (Census farm equals farm product sales over $250/yr.). While this is a 15% decrease in farm acreage since 1971, the percentage of that acreage that is listed as "improved" (ie. under crops or improved pasture) increased dramatically from 51% of total land in farms in 1971 to 78% in 1986.

Actual numbers of census farms also decreased from 3410 census farms in 1971 to 2825 census farms in 1986; a reduction of 17.2%. Variation within the region, however, is significant. As Table 2 indicates, while numbers of farms declined within GVRD, they remained relatively constant in Langley Township; while numbers of farms increased significantly in Pitt Meadows, they declined in Maple Ridge.

TABLE 2: NUMBERS OF CENSUS FARMS, 1971 AND 1986[1]

	Total GVR	GVRD	Twp.Lang.	Pitt . Meadows	Maple Ridge
1971	3410	1783	1152	126	349
1986	2825	1325	1146	173	181

[1]Census Canada 1971, 1986

Except for livestock numbers, comparative statistics for agricultural commodities are only available for the former GVRD portion of the region. While caution should be used in interpreting such incomplete data, the strongest trends within the former GVRD appear to be increased production in blueberries and cranberries and major expansion in square footage in greenhouses. Acreage in vegetables also showed moderate increase from 1971 to 1986. (Census Canada)

What livestock numbers are available for Greater Vancouver region suggest a decline in cattle and chickens and a small increase in pigs, sheep and horses, with significant variability within the region.

b. Agricultural Land Loss and ALR Status

Within the region, ±68,000 ha. of Agricultural Land Reserves were designated under the Land Commission Act in 1974. Since that time, ±3800 ha. or approximately 5% of this land has been excluded from the ALR through application by local or regional governments or by individuals. (interpreted. from Ag. Land Res.

Stats. Prov. Ag. Land Com.) Map 1 indicates the general extent of the ALR within the region.

The following summarizes regional ALR acreage as of January 1, 1989 in the context of the Lower Mainland and the Province:

ALR STATISTICS AS OF JANUARY 1, 1989[1]

	ha.	% of BC ALR	% of BC Land Area
Total Provincial ALR	±4,701,661	-	5%
Lower Mainland ALR (from Coast east to Hope)	±140,219	3%	.15%
Greater Vanc.region ALR (GVRD, incl. Langley Twp. plus Maple Ridge, Pitt Meadows)	±64,000	1.4%	.07%

[1]Source: Provincial Ag. Land Commission Statistics, 1989 and ALC Lower Mainland Quick Facts; 1990

c. Rural Land Use Change

Over half of Canada's high capability agricultural land is within a 161 km. radius of the 23 largest cities, including Vancouver. According to Environment Canada, who have analyzed land use change in urban-centred regions, prime agricultural land (Class 1-3) accounted for more than half of the rural land converted to urban uses within Canada from 1966 to 1986. More specifically, from 1981 to 1986, the Toronto urban centered region absorbed ±10,000 ha. of prime agricultural land, Edmonton, ±4000 ha., Montreal ±2600 ha. and Vancouver ±500 ha. (Lands Dir. Envir. Can.,1985)

Expressed another way, in terms of rural area urbanized per 1000 increase in population: Toronto - 36 ha., Calgary - 78 ha., Montreal - 55 ha., and Vancouver - 28 ha. (Warren, Kerr, Turner, 1989) Of the acreage converted to urban uses in Canada between 1981 and 1986, it is indicated 30% had been in productive

agriculture in 1981. Abandoned agricultural land comprised another 11% of the land urbanized from 1981 to 1986. (Warren, Kerr & Turner, 1989)

In British Columbia, prior to the adoption of the Agricultural Land Commission Act in 1973, the major net land use change was the conversion to urban uses; 48% of this conversion was from lands in agricultural production. This rate of conversion of rural to urban use slowed significantly from 1971-1982. Evidence suggests the introduction of the ALR legislation in 1973 decreased this annual use conversion by 35 ha/yr, for a net decrease of urban use conversion of agricultural lands within the ALR of 110%. (Kaspryk)

Table 3 summarizes rural land use change within the Greater Vancouver region from 1976 to 1986:

TABLE 3: RATES OF RURAL LAND USE CHANGE AND AGRICULTURAL CAPABILITY OF LAND CONVERTED: GREATER VANCOUVER REGION

	Annual Rates Rural to Urban[1]		Agric. Cap. Land Converted[2]	
			Percent Class 1-3	Percent Class 4-6
1971-1976	2095 ha/yr.			
1976-1982	1224 ha/yr.		19	59
1982-1986	644 ha/yr.	1980-1987	15	40

[1] Lands Directorate, 1985
[2] Lands Directorate, 1985 for 1976-82; Moore, 1990 for 1980-87

Further analysis of available data on rural land use change indicates the following trends during this period:

* Although there has been a slight increase in agricultural use within the region, it maintains a net 24% use share of total land area. (Moore, 1990)

* Actively farmed agricultural land was second only to undisturbed lands (forest land) as a target for new urban

use activities, particularly residential use.

* Approximately 1/4 of rural land that was urbanized had been in either forage production or pasture prior to use conversion.

* Agricultural use has intensified in that there was a significant increase in annual crop (±10%), and site agriculture (eg: greenhouses, mushrooms) (±10%) land area plus a very significant increase in berry fruits (±32%), but a reduction in forage production (±10%).

B. AGRICULTURAL SOCIO-ECONOMICS

1. CHANGING RURAL LIFESTYLES

a. Suburbanization

The adverse affect of urbanization upon agriculture goes beyond the actual loss of productive farmland through conversion to other uses. What is often referred to as the "urban shadow effect" exerts additional pressure upon remaining farmers once incompatible land uses locate in a farming area.

Food producers located on the urban edge are often caught in a 'Catch 22' situation. Most of them want to keep on farming and living a rural or semi-rural lifestyle. Yet, as urban uses reach out to impact upon them, they find it harder to carry out normal farm management practices and resist the temptation to capitalize on the higher land prices on the speculative edge.

Once an agricultural community begins to disintegrate, an attitude emerges that hurries the process along. As the number of farms in each commodity group declines, so do essential agricultural support services. Uncertainty takes its toll as the psychology of expectation of further use conversion spreads

throughout the community. Inevitably, farm owners and operators begin to cut back on capital investment and labour requirements that the long term commitment to food production demands.

b. The Rural-Urban Connection

Impact of adjacent urbanization upon farming communities is not all negative; the urban edge location allows farming communities to enjoy some benefits as well. Quick transportation access to urban markets, as well as to processors, packers and distributors, provides some comparative advantages, particularly for perishable foodstuffs. From the social and lifestyle point-of-view, farmers and their families within easy reach of "downtown" do not have the isolation complaint heard in some purely rural settings. Cultural and sport activities, for example, are often more easily accessible. There is also increased opportunity to live away from the farm and to combine on-farm employment with other vocational pursuits.

For the adjacent urban community, the presence of farms on the urban edge also offers some unique opportunities. Farmland is rural landscape with a special character that all residents, rural and urban, can visually share. With food production nearby, the urban community's dependence on more distant food sources is somewhat reduced. A farming community with as wide a range of crop options as the Greater Vancouver region creates the potential for greater self reliance.

Urban communities that live near farming communities also have an educational advantage. Most urban people find it profoundly interesting to see where food comes from and what happens to it in the production process. Agricultural activities close at hand can serve to remind urbanites of those natural rhythms upon which life depends.

2. URBAN EDGE FOOD COMMODITY ECONOMICS

a. Food Production

Urban edge agriculture is simultaneously rich with new economic opportunities and in serious economic crisis. Most of the 80+ commodities produced in B.C. are produced within the region.

To place the region in a provincial context, in 1976, provincial farm cash receipts were ±$480 million; the 1989 estimate is $1.175 billion, an increase of 145% in real dollars. (Farm operating expenses also increased about 147% from 1976 to 1989). During that same period, regional farm cash receipts are estimated to have increased about the same percentage from ±$120 million to ±$300 million (Census Canada, B.C. Min. of Agriculture, 1978) Using another farm value indicator, in 1986, farm capital investment within the region (land plus buildings, machinery, equipment livestock and poultry) was over $1.2 billion. This represents a 242% increase in real dollars over 1971. (Census Canada, 1971,1986)

Within the region, there has been a proportional shift in increased capital investment from the former GVRD to Langley Township. While Maple Ridge and Pitt Meadows continue to account for just over 10% of total farm capital investment in the region, since 1971 Pitt Meadows has increased in significance while Maple Ridge has decreased slightly.

b. Food Processing and Agri-Industry

Through the activities of some 350-400 agriculture-related businesses associated with processing, transporting, storing, distributing and retailing, the $1.175 billion worth of farm products currently produced in the province is estimated to increase in value to $4.7 billion, providing more than 190,000 jobs. (B.C. Min. of Agriculture and Fisheries, 1990)

Within the Greater Vancouver region, it is estimated there is a concentration of some ±250 businesses (or approximately 70% of the provincial total) involved in food processing and associated activities, with an estimated output value of ±$3 billion. Some stimulus has resulted from two Agri-Food Regional Development Subsidiary Agreements (1977-90), through which ±$16 million has been provided jointly by federal and provincial governments and the food industry for processing and associated industrial development within the Greater Vancouver region.

3. AGRICULTURE INFRASTRUCTURE

The region's farming community is actively involved in a number of diverse commodity-oriented producer associations and marketing cooperatives. Most of these associations provide opportunity for local farm community representation to provincial producer or commodity organizations, such as the B.C. Federation of Agriculture.

There is a "critical mass" of farms necessary to support appropriate farm community infrastructure, such as machinery service or livestock feed supply. With the conversion of farmland out of agricultural use and the reduction in numbers of farms since 1971, agricultural infrastructure within the Greater Vancouver region has become increasingly fragmented, with many service components now available only east of the region or in the U.S.

4. TECHNOLOGICAL CHANGE

As with many industries, rapid technological change is taking place within the region's agricultural industry. Some noteworthy regional examples include: computer feeding of livestock, hydroponic greenhouse production of vegetables, integrated pest

management of berry fruits and vegetables, in vitro transplants in dairy cattle, and marketing facilities such as that of the United Flower Growers' Co-Op Assoc. in Burnaby. This rapid evolution of the business of agriculture is likely to continue, bringing with it changing relationships in terms of economies of scale, investment and farm viability.

5. RURAL REAL ESTATE

a. Ownership and Ownership Change

While 1971 and 1986 census data is not precisely comparable in terms of numbers and acreages of farm owner/operator versus rented or leased, only within the former GVRD does there appear to have been a significant increase in the proportion of rental/lease.

In 1971, 81.5% of the operators within the former GVRD, representing 69% of the farm acreage were owners of their farm. By 1986, that percentage had declined to 74% of the farms representing 56% of the land area.

While little other factual information could be found on this particular issue, anecdotal reference suggests that some area-specific farmland ownership change to non-farm community owners has taken place in recent years. This may relate to the waves of expectation of potential use conversion, in part triggered by local exclusions from the ALR or the regulatory amendment related to golf course opportunity within the ALR.

Specific research may be warranted on change in ownership of farmland in the region, including data on location, extent and rate of change as well as on characteristics of sellers and buyers of farmland. A related question is the actual impact of ownership change upon land use, including the sometimes positive impact of making land available to adjacent farmers who desire to

expand their operations but can not afford the capital investment of land purchase.

Within the Greater Vancouver region, there continues to be a large acreage of Crown land under provincial and federal ownership, used for various agricultural purposes under various lease and rental tenure arrangements. Much of this land was acquired by government agencies for purposes other than agricultural, including airport, national defence, wildlife habitat, regional park and future industrial uses.

The associated agricultural use of these lands is significant, however, with tenures ranging from temporary growing season rental to short or long term lease with option to purchase to immediate opportunity for outright purchase. At present, there is no overall strategy for future agricultural use of the substantial acreage of publicly owned farmland within the Greater Vancouver region and, therefore, no guidelines for the sale or additional purchase of public lands in the context of agricultural and other rural use priorities.

b. Land Value Trends

No farmland owner or farm business operator can be expected to totally ignore the fact that, regardless of farmland capability, productivity or zoning, farmland sells at higher prices if located in an area with anticipated potential for urban use conversion.

Regional farmland values vary widely depending on land characteristics, agricultural use options, location, parcel size and psychology of expectation with respect to use conversion. In general, however, there has been an upward trend in farm values.

Population growth in the region in the past decade has resulted in a corresponding increase in the numbers of people seeking "rural" lifestyles. This has resulted in a rapidly increasing demand and thus significantly higher per acre values for small

parcel sizes (2-10 acs) for estate residential, hobby farming, horticultural and site-oriented agricultural pursuits. For a more accurate reflection of per acre value of farmland for food production, one must look to larger parcels, (40 - 100 acs) away from the urban edge.

Changes in land use regulation (eg: recent change in golf course use approval within ALR's) have also fuelled speculation on farmland, which further reduce farm community opportunity to compete realistically for land to be used for food production.

C. AGRICULTURE AND THE ENVIRONMENT

1. LEGISLATION, REGULATION AND MONITORING

The policies and programs of federal, provincial and local governments greatly influence the location and viability of producing, processing, distributing and marketing agricultural commodities.

Food producers and associated businesses within the region are regulated by, supported by, or in varying degrees impacted by over 40 federal Acts and associated regulations and a near equivalent number of provincial statutes. In addition, Municipal governments exert their influence through regulatory by-laws, administration and taxation under the Municipal Act.

At the federal level, the habitat protection mandate included in the federal Fisheries Act has significantly influenced regional water and land activities associated with farm management.

Provincially, the 1978 legislative amendments to the appeal process under the Agricultural Land Commission Act and the 1988 amendments to its land use regulations with respect to golf

course use have negatively affected agriculture within the region.

Elsewhere, pressures upon farmers to discontinue farming originating from neighbouring non-farm land users have resulted in legislation commonly referred to as "right-to-farm". Such legislation seeks to establish a first use in time/first in right, whereby prior farming uses of land have primacy over other adjacent uses. Right-to-farm laws are intended to at least partially insulate farmers from the complaints of adjoining landowners.

In B.C., an attempt at "right-to-farm" legislation - the Agriculture Protection Act - was passed in 1989 but, in the opinion of many, still does not adequately meet needs.

Agricultural commodity organizations and provincial agencies are presently cooperating to develop codes of agricultural practice for waste management. The primary benefits will be guidelines to farm managers that will also offer some protection to farmers from nuisance complaints; however, unscrupulous operators will have no defence.

Another piece of legislation, the recently passed Food Choice and Disclosure Act, sets the first provincial standards for the expanding organic farming component of the industry.

Many recent local government bylaws related to specifics of agricultural operations and associated adjacent uses have also contributed to a more regulated environment for the food producer; however, in most cases, they have also generally increased overall rural livability.

2. SOIL AND WATER CONSERVATION ISSUES

There are increasing industry, government agency and public concerns with agriculture associated drainage and water supply (quantity and quality), and with the impact of soil degradation, particularly related to erosion by water, (including offsite impacts on habitat and water quality), compaction and contamination.

a. Drainage, Irrigation and Water Supply

Within the region from 1977 to 1990, some ±$14 million has been provided by federal and provincial governments and users on a cost share basis, mainly for drainage and water supply improvements. Through such expenditure, the regional situation has improved considerably, however, drainage (regional, local and on-farm) continues to be a constraint to increased productivity of many soil-bound crops.

Conflicts between urban and agricultural land drainage requirements are common, including upland urban runoff impact on agricultural lowland floodplains. Local conflicts can also arise amongst agriculture commodity users, as with cranberries versus forage and vegetable drainage requirements.

In terms of irrigation and water supply, as regional agriculture intensifies (eg: recent use conversion from forage/livestock to berry fruits, poultry or greenhouses), so does the demand for additional quantities of higher quality water for irrigation and other purposes. With heightened concern over degraded groundwater and reduced water quality in the Fraser River and its tributaries, the competition for high quality agricultural water supply is intensifying, particularly during the growing season.

b. Soil Degradation

Increasingly, the public and government agencies are becoming concerned with the actual and potential onsite and offsite

impacts of soil erosion, particularly on fish habitat and water quality.

As land is intensively cultivated, with land management choice resulting in exposed soil surfaces during the high rainfall winter season, hazards of soil erosion by water increase. Soil loss of greater than 30 tons/ac/yr have been reported on the sloping Fraser Valley uplands.

Intensified cultivation often results in increased numbers of passes by heavy equipment on wet and moist soils and, thus, compaction is also an increasing problem on the silt and clay soils common to the region.

Soil contamination is a recent but growing regional concern (local and site specific focus), which is a risk related to history of use associated with food production and other land uses. Some of the interest by consumers and producers in organic farming and food products is likely the result of heightened public concern with soil contamination.

3. INTENSIVE AGRICULTURE ISSUES

As agriculture continues to intensify and residential and recreational developments continue to expand within the rural areas of the region, conflicts between farm and non-farm neighbours also become more common. Noises and smells or normal early morning/late night farm management activities associated with intensive agricultural operations, such as poultry, hogs, beef feedlots, mushroom operations and greenhouses, are the most common sources of complaint from residential neighbours.

While some local governments are now implementing bylaws to provide for properly designed and located intensive agricultural operations with appropriate use separation distances, this will likely continue to be an issue within the region. This will be

in addition to other intensive agriculture concerns, such as potential environmental impact through contamination of air, soil and water resources from animal wastes and use of chemical pesticides and fertilizers.

4. PESTICIDE/HERBICIDE/FERTILIZER USE

Not unlike elsewhere in North America, the initial spectacular success of chemicals to control insect, pathogen and weed pests and the demonstrated ability of fertilizers to substantially increase crop yields lead farmers within this region to considerable reliance upon chemicals as part of their normal management activities. Recently, however, growing public concerns with the effects of such compounds upon the environment and public health have contributed to a re-evaluation of chemical pest control and wholesale use of chemical fertilizers. From the farmer's perspective, an additional factor is the increasing cost of such compounds.

In terms of pesticides and herbicides, there is now a trend towards more ecologically harmonious integrated pest management with focus on biological control.

Increasing fertilizer costs and environmental concerns, particularly in this high winter rainfall area, are also moving regional farmers towards a more fine-tuned management approach that relies more on the use of organic rather than inorganic fertilizers.

There has also been an increase in regulatory control of chemical applications; however, with increased regulation has come reduced flexibility for the farmer, such as restrictions on aircraft spraying near residential areas.

D.RURAL LAND USE PLANNING

Livability within the Greater Vancouver region is greatly enhanced by its rural areas and the presence of the farming community. This is in addition to its direct contributions to the regional economy. Agriculture has a role in providing the diversity of landscapes that residents of the region enjoy, as well as functioning as a buffer between the urban and natural environments.

As both rural and urban populations within the region increase, the competition amongst the wide range of land and water users also intensifies. This ensures there will be continuing pressure for suburbanization of agricultural areas, including demands for rural estate residential uses, fish and wildlife habitat enhancement, outdoor recreation activities, urban transportation and servicing.

It is reported that there are at least ±14,000 ha. of land designated for urban use outside of the ALR within this region. In addition, there is a significant acreage zoned rural, a component of which likely has urban development suitability. Assurance of a continuing role for agriculture as part of the region's land use mix will require good planning of such areas to accommodate future population growth. Also essential, of course, will be complementary, proactive rural planning with a focus on "sustainable agriculture". This must include preservation of the land base, but also involve support for those that sustain the land and keep the farming community thriving. It also means building the positive linkages between food producers and urban consumers.

1. URBAN/RURAL USE INTERFACE

There are at least two opposing perspectives of agriculture on the urban fringe:

a) agriculture is seen as being in a locational advantage close to services and consumers, with the challenge being positive adaptation and adjustment to the dynamics in developing production and marketing opportunities.

b) agriculture is ultimately doomed and viewed as only an interim use of the land until it too is converted to urban development; the assumption being that urban based forces hold such negative consequences for agricultural infrastructure and productivity that farming has no long-term viability.

If the first perspective is adopted and the goal is for a healthy, vibrant, sustainable agricultural community, there are a wide range of urban-rural interface issues that will need to be addressed, many of which have already been mentioned within this background paper:

* agricultural versus urban drainage requirements
* water competition (quality, quantity, access and development cost sharing)
* specific interface use setbacks and buffers (site planning)
* parcel size and density of interfacing uses
* speculative ring impact on agricultural land values
* urban utility and transportation severance and requirements
* siting of intensive agriculture, particularly livestock oriented
* right-to-farm (nuisance vs. first in time, first in right)

* pesticide application (drift, odours, loss of organic status, health risk)
* livestock waste management
* soil erosion by water
* communication/education of interfacing users
* lack of understanding of agriculture and farm management practices by the adjacent residential community
* government regulatory complex associated with use interface
* outdoor recreation demands (ATV's, pets, etc.)
* fish and wildlife habitat considerations
* psychological impact of intense urban edge pressure upon the commitment of those in agriculture
* linear extent of the rural/urban boundary interface

2. IMPACT OF NON-AGRICULTURAL RURAL USES

a. Rural Estate Residential Use

Demand for rural estate residential use opportunity, most often satisfied by purchase of existing smaller parcels within the ALR, pushes the market value of farmland out of reach of most food producers. In addition, increased land use conflict potential is often associated with estate residential use dispersed throughout the farming community.

b. Golf Course Use

As an indicator of increased golf course use demand, since mid-1988 when the land use regulations under the Agricultural Land Commission Act were amended by Order-in-Council, the Agricultural

Land Commission has received 22 applications from within the Greater Vancouver region for conditions of golf course use.(22 out of a total of 81 applications provincially)

Location and siting of golf courses within the agricultural community is critical, with the impact potential being dependent on a number of issues, namely:

* land capability for agriculture (soils/climate combination)
* kind of adjacent agriculture
* kind of buffers in golf course design (transition of uses)
* drainage and water supply (irrigation and otherwise)
* groundwater contamination risk
* effluent treatment method
* transportation access and use frequency
* associated uses; that is other than the required clubhouse and ancillary building requirements
* creation of isolated agricultural use parcels

In addition, impact on local farm land values and on demand for non-agricultural uses on adjacent land can be significant. (Several municipalities have developed appropriate bylaw and guideline response to address this potential impact.)

c. Urban Transportation Requirements

Some of the impacts upon the farm community of demands for improved urban and commuter automobile transportation networks are:

* farm production unit and parcel severance
* reduced farm to market access
* increased hazard for slow-moving farm vehicles
* reduced access within the farming community

d. Wildlife Habitat Considerations

As regional fish and wildlife habitat in the urbanized portion of the region come under stress, farming areas are increasingly looked to for replacement habitat and associated conservation areas. While integrated planning and resource management efforts have been initiated in some instances and currently proposed in others, habitat considerations can have negative impact on farmlands and their use for food production.

e. Hobby Farms and the Suburban Horse

There is increasing demand for hobby farm opportunity and particularly pleasure horse-oriented activity in some parts of the region. On the one hand, hobby farm activity provides an understanding of rural lifestyles and perhaps the opportunity for entrance into commercial agriculture. On the other hand, hobby farms can remove high capability land from food production and contribute to increased land values for those in commercial agriculture.

E. BROAD POLICY ISSUES

Agriculture has been and continues to be an important sector within the economy of the Greater Vancouver region. In addition to its contribution to production, processing, wholesaling and retailing of food, agriculture plays an important role in the continuum of rural land uses, often complementing and sometimes enhancing other rural resource values, such as waterfowl/wildlife habitat and outdoor recreation.

To the people who live in the region, it is suggested that agriculture helps define the character of the region as a whole, the lifestyle opportunities and the strong positive feeling that residents have about where they live.

Within the region, urban and rural have developed a somewhat symbiotic relationship. The impacts and interchanges between urban-edge farmers and farm-edge urbanites are many. There is something about the presence of an agricultural way of life that contributes in a unique way to the character of an urban community. Especially in areas with as long and successful a history of farming as the Greater Vancouver region, many operations have been in the same family for generations. In any one generation, a farm family may have no young member who wants to continue in the farming business, but other young urban-raised members of the same family, who have been exposed to the farm lifestyle on a part-time basis, often choose to move into the family farming operation as a career.

If agriculture is to remain and indeed thrive as part of the Greater Vancouver region's economic, landscape and lifestyle diversity, it must become a more integrated part of the overall planning process. Left on the edge of the process, the region's agricultural community will likely suffer the fate of so many other North American farm communities in similar locations,

subconsciously dismissed as a form of urban edge open space, laying in wait for the next inevitable leap of urban development.

Conversely, if the people of the Greater Vancouver region take pride in their agricultural community and are prepared to give agriculture the planning priority and market consideration it requires, then the opportunity exists for a vibrant, healthy, sustainable agricultural industry within the Greater Vancouver region.

The opportunity remains but only just. For existing and future agricultural activity to flourish, an adequate regional supply of land for soil-bound and non-soil bound primary production activity must be assured. Because land use often shifts in response to the economic viability of the activity it supports, efforts to protect the agricultural land base will be impeded if the agricultural community is in economic difficulty for any length of time. Protection of the land base is irrevocably tied to the security of farmers and the health of farm communities. With the removal of uncertainty related to farm land conversion and erosion of infrastructure, agricultural communities can concentrate on managing their land and business resources and developing food producing opportunities for the long term.

A sustainable regional agricultural industry will depend upon addressing a number of broad policy issues, including:

1. Sustaining Agriculture in the Metropolitan Environment.

   The well being of the region's agriculture continues to be directly and indirectly threatened by urbanization, whether by continuing pressures for use conversion, high land values, impact of servicing and transportation corridors, or competition from other non-agricultural rural uses. In addition to retaining the land base, the planning challenge is to also sustain the farming expertise and the health of the farm community.

2. Agriculture as part of the "Working Landscape".

Both the economy and the livability of the region is enhanced by the presence of agriculture. The challenge is to find a method of acknowledging this contribution and encouraging development of food producing options to ensure agriculture's continued presence as an integrated part of the working landscape.

3. Waste Management and Other Environmental Considerations.

With the increased stress on wildlife habitats, heightened public concern with degradation of soil and water resources, combined with trends towards intensified agricultural use, future integrated action on environmental protection will be critical. This will mean sustained effort on the part of the farming community to produce high quality food within the environmental parameters set by governments, consumers and the market place.

4. Land Availability for Alternate Uses

A companion background paper addresses urban land supply. A key agricultural land conservation measure will be the redirection of regional urban growth to available and suitable lands outside the ALR and the encouragement of urban densification and renewal.

5. Floodplain Management Interrelationships.

Agricultural land preservation and floodplain management are mutually supportive. It will be in the regional interest to link these two policy issues through cooperative initiatives between all levels of government in the areas of planning, zoning, development financing, dyking and drainage.

In addition to these regional policy issues, of course, there are also major external influences, some extremely far reaching, that

will impact upon the future of agriculture within the Greater Vancouver region:

6. Provincial Agricultural Policy

Policy initiatives or changes at the provincial level associated with agricultural land preservation, integrated land use planning, farm income stability programs, regional drainage, urban edge marketing and environmental protection have all had and will continue to have either positive or negative impacts upon regional agriculture. A commitment to sustainable agriculture within the Greater Vancouver region will require constant vigilance and proactive lobbying for provincial policies and programs supportive of this goal.

7. Competitive Trends in Agriculture

Although not all of the ramifications are known at this stage, indications are that certain regionally produced commodities, such as processing vegetables, may well be seriously impacted by free trade and perhaps GATT decisions. A key challenge for regional agriculture and governments will be to retain the flexibility to respond to changing world marketing situations.

8. Climatic Change

The Greater Vancouver region is reported to be one of the most seriously affected areas in Canada with respect to ozone concentration. Uncertainties are many and information often contradictory, yet actions to reduce buildup of greenhouse gases must be considered as an insurance policy against potential serious impact on regional food production opportunity.

REFERENCES

American Farmland Trust. 1987. Planning and Zoning for Farmland Protection - A Community Based Approach. Washington, D. C.

B.C. Ministry of Agriculture and Fisheries. 1990. Agriculture, Fisheries and Food in B.C. - An Overview. Victoria.

B.C. Ministry of Agriculture. 1978. Agriculture Statistics Yearbook. Victoria.

Beesley, K. B. and L. H. Russwurm. 1981. The Rural-Urban Fringe: Canadian Perspectives. Geographical Monographs. York University - Atkinson College.

Bertrand, R. A. and R.C. Wood. 1983. Soil Management Handbook for the Fraser Valley. Soils Branch, B.C. Ministry of Agriculture and Food. Surrey.

Climate Division. 1978. Climatic Capability Classification for Agriculture in B.C. Resource Analysis Branch, Ministry of Environment. Victoria.

Dykeman, F. W. 1988. Integrated Rural Planning and Development. Mount Allison University, Sackville, N.B.

Furuseth, O. J. and J. T. Pierce. 1982. Agricultural Land in An Urban Society.

Lands Directorate. 1985. Land Use Change in Canada - Vancouver Urban-Centred Region 1976-1982. Environment Canada. Ottawa.

Lockeretz, W. 1987. Sustaining Agriculture Near Cities. Soil and Water Conservation Society. Ankeny, Iowa.

Luttmerding, H. A. 1981. Soils of the Langley-Vancouver Map Area (Vols. 1,3,5) RAB Bulletin 18. Ministry of Environment. Kelowna.

Mcrae, J. D. 1980. The Influence of Exurbanite Settlement on Rural Areas: A Review of the Canadian Literature. Lands Directorate. Environment Canada. Ottawa.

Moore, K. 1990. Urbanization of the Lower Fraser Valley (Draft) 1980-1987. Canadian Wildlife Service, Environment Canada. Delta.

Provincial Agricultural Land Commission. 1989. Agricultural Land Reserve Statistics - to January 1, 1989. Burnaby.

Provincial Agricultural Land Commission. 1990. Lower Mainland Quick Facts. Burnaby.

Rees, W. E. et al. 1989. Planning for Sustainable Development - A Resource Book. UBC Centre of Human Settlements. Vancouver.

Runka, G. G. Land Sense Ltd. 1984. Richmond the Agricultural Perspective. Prepared for the Corporation of the Township of Richmond. Burnaby.

Runka, G. G. Land Sense Ltd. 1990. Soil Degradation and Rural Land Use Change. Uplands of Langley and Matsqui Municipalities - Fraser Valley. ARDSA Project 23010. Burnaby

Soils Branch, Surveys and Resource Mapping Branch. 1983. Land Capability Classification for Agriculture in British Columbia. MOE Manual 1. Ministry of Agriculture and Food and Ministry of Environment. Kelowna.

Statistics Canada. 1986. Census of Agriculture. Ottawa.

Steiner, F. 1981. Ecological Planning for Farmlands Preservation. APA, Chicago.

Stott, J. 1988. Trends in Agriculture 1966-1986 - From the Census of Agriculture. Langley Economic Development Commission.

Warren, C. L., A. Kerr and A. M. Turner. 1989. Urbanization of Rural Land in Canada, 1981-86 - A State of the Environment Fact Sheet. Sustainable Development Branch, Environment Canada. Ottawa.